

The following Listing of Claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

1. (Cancelled)

2. (Currently Amended) A motor control method for controlling at least one of voltage and current applied to a motor, which drives a periodic load, from an inverter for varying motor output torque periodically in reversed phase with respect to the fundamental wave component of an angular acceleration of the motor, the method comprising the steps of:

detecting at least one of an output voltage value and a voltage command value of the inverter as a detection value; and

controlling at least one of voltage and current of the inverter to suppress periodic rotational speed variations of the motor that result from the periodic load based upon the detection value so that one of the output voltage value and voltage command value of the inverter does not exceed a predetermined value, taking precedence over suppression of the rotational speed variations.

3. (Previously Presented) A motor control method as set forth in claim 2, wherein

the detection value is a peak value of one of the output voltage value of the inverter and the voltage command value.

4. (Currently Amended) A motor control method for controlling at least one of voltage and current applied to a motor, which drives a periodic load, from an inverter for varying motor output torque periodically in reversed phase with respect to the fundamental wave component of an angular acceleration of the motor, the method comprising the steps of:

decreasing an amplitude of an output torque variation of the motor; and

controlling at least one of voltage and current of the inverter to suppress periodic rotational speed variations of the motor that result from the periodic load so that at least one

of the output voltage value and the voltage command value of the inverter does not exceed a predetermined value.

5. (Cancelled)

6. (Cancelled)

7. (Currently Amended) A motor control method for controlling at least one of voltage and current applied to a motor, which drives a periodic load, from an inverter for varying motor output torque periodically in reversed phase with respect to the fundamental wave component of an angular acceleration of the motor, the method comprising the steps of:
decreasing an amplitude of an output torque variation of the motor; and
controlling at least one of voltage and current of the inverter to suppress periodic rotational speed variations of the motor that result from the periodic load so as not to exceed a current detection extent.

8. (Previously Presented) A motor control method for controlling at least one of voltage and current applied to a motor from an inverter for varying motor output torque so as to suppress rotational speed variations of the motor which drives a periodic load, the method comprising the steps of:
decreasing an amplitude of an output torque variation of the motor; and
controlling at least one of voltage and current of the inverter so as not to exceed a current detection extent,
the output current of the inverter being indirectly detected by detecting an input current of the inverter using the current detection section with at least one of the voltage and the current of the inverter being controlled so that a negative peak value of an input current of the inverter does not exceed the predetermined value.

9. (Currently Amended) A motor control method for controlling at least one of voltage and current applied to a motor, which drives a periodic load, from an inverter for varying motor output torque periodically in reversed phase with respect to the fundamental wave component of an angular acceleration of the motor, the method comprising the steps of:

detecting or estimating load; and
suppressing periodic rotational speed variations of the motor that result from the periodic load except when the load is smaller than a predetermined value.

10. (Previously Presented) A motor control method as set forth in claim 9, wherein
the load is detected or estimated by an average current.

11. (Previously Presented) The motor control method as set forth in claim 2, wherein
the inverter varies output torque, and
a converter is provided which can control a direct current voltage supplied to the inverter.

12. (Previously Presented) A motor control method as set forth in claim 11, wherein
the direct current voltage supplied to the inverter is controlled based upon the detection value.

13. (Cancelled)

14. (Currently Amended) A motor control apparatus for controlling at least one of voltage and current applied to a motor, which drives a periodic load, from an inverter for varying motor output torque ~~periodically~~ in reversed phase with respect to the fundamental wave component of an angular acceleration of the motor, the apparatus comprising:

a detection section for detecting at least one of an output voltage value and a voltage command value of the inverter as a detection value; and

an inverter control section for controlling at least one of voltage and current of the inverter to suppress periodic rotational speed variations of the motor that result from the periodic load based upon the detection value so that one of the output voltage value and the

voltage command value of the inverter does not exceed a predetermined value, taking precedence over suppression of rotational speed variations.

15. (Previously Presented) A motor control apparatus as set forth in claim 14, wherein

the detection value is a peak value of one of the output voltage value of the inverter or the voltage command value.

16. (Previously Presented) A motor control apparatus for controlling at least one of voltage and current applied to a motor, which drives a periodic load, from an inverter for varying motor output torque periodically in reversed phase with respect to the fundamental wave component of an angular acceleration of the motor, the apparatus comprising:

a section for decreasing an amplitude of an output torque variation of the motor; and
an inverter control section for controlling at least one of voltage and current of the inverter to suppress periodic rotational speed variations of the motor that result from the periodic load so that one of an output voltage value and a voltage command value of the inverter does not exceed a predetermined value.

17. (Cancelled)

18. (Cancelled)

19. (Currently Amended) A motor control apparatus for controlling at least one of voltage and current applied to a motor, which drives a periodic load, from an inverter for varying motor output torque periodically in reversed phase with respect to the fundamental wave component of an angular acceleration of the motor, the apparatus comprising:

a section for decreasing an amplitude of an output torque variation of the motor; and
an inverter control section for controlling at least one of voltage and current of the inverter to suppress periodic rotational speed variations of the motor that result from the periodic load so as not to exceed a current detection extent.

20. (Previously Presented) A motor control apparatus for controlling at least one of voltage and current applied to a motor from an inverter for varying motor output torque so as to suppress rotational speed variations of the motor which drives a periodic load, the apparatus comprising:

a section for decreasing an amplitude of an output torque variation of the motor; and
an inverter control section for controlling at least one of voltage and current of the inverter so as not to exceed a current detection extent,

the current detection section indirectly detecting the output current of the inverter by detecting the input current of the inverter, and wherein the inverter control section controls at least one of voltage and current of the inverter so that a negative peak value of the input current of the inverter does not exceed a predetermined value.

21. (Currently Amended) A motor control apparatus for controlling at least one of voltage and current applied to a motor, which drives a periodic load, from an inverter for varying motor output torque periodically in reversed phase with respect to the fundamental wave component of an angular acceleration of the motor, the apparatus comprising:

a load detection section for detecting or estimating load; and
an inverter control section for suppressing periodic rotational speed variations of the motor that result from the periodic load except when the load is smaller than a predetermined value.

22. (Previously Presented) A motor control apparatus as set forth in claim 21, wherein

the load detection section detects or estimates load by an average current.

23. (Currently Amended) A motor control apparatus for controlling at least one of voltage and current applied to a motor, which drives a periodic load, from an inverter for varying motor output torque periodically in reversed phase with respect to the fundamental wave component of an angular acceleration of the motor, wherein a converter is

provided which can control a direct current voltage supplied to the inverter, the apparatus comprising:

a detection section for detecting at least one of an output voltage value and a voltage command value of the inverter as a detection value;

an inverter control section for controlling at least one of voltage and current of the inverter to suppress periodic rotational speed variations of the motor that result from the periodic load based upon the detection value so that one of the output voltage value and the voltage command value of the inverter does not exceed a predetermined value; and

a direct current voltage control section for controlling the direct current voltage supplied to the inverter based upon the detection value.

24. (Cancelled)

25. (Previously Presented) The motor control method as set forth in claim 11, wherein

the controlling at least one of voltage and current of the inverter is accompanied with a decrease of an amplitude of an output torque variation of the motor.

26. (Previously Presented) The motor control apparatus as set forth in claim 23, wherein

the inverter control section for controlling at least one of the voltage and current of said inverter is accompanied with a decrease of an amplitude of an output torque variation of the motor.

27. (Previously Presented) A motor control method for controlling at least one of voltage and current applied to a motor from an inverter for varying motor output torque so as to suppress rotational speed variations of the motor which drives a periodic load, the method comprising the steps of:

detecting a current of the inverter as a current detection value using a current detection section for driving the motor; and

controlling at least one of voltage and the current of the inverter based upon the current detection value so as not to exceed a current detection extent, for driving the motor,

the output current of the inverter being indirectly detected by detecting an input current of the inverter using the current detection section with at least one of the voltage and the current of the inverter being controlled so that a negative peak value of an input current of the inverter does not exceed the predetermined value.

28. (Previously Presented) A motor control apparatus for controlling at least one of voltage and current applied to a motor from an inverter for varying motor output torque so as to suppress rotational speed variations of the motor which drives a periodic load, the apparatus comprising:

a current detection section for detecting as a current detection value at least one of an input current and an output current of the inverter, for driving the motor; and

an inverter control section for controlling at least one of voltage and current of the inverter based upon the current detection value so as not to exceed a current detection extent, for driving the motor,

the current detection section indirectly detecting the output current of the inverter by detecting the input current of the inverter, and wherein the inverter control section controls at least one of voltage and current of the inverter so that a negative peak value of the input current of the inverter does not exceed a predetermined value.